

## Filter units for filtration, iron removal and demanganisation

RWT manufactures standardised gravel filter units (of type KIF).

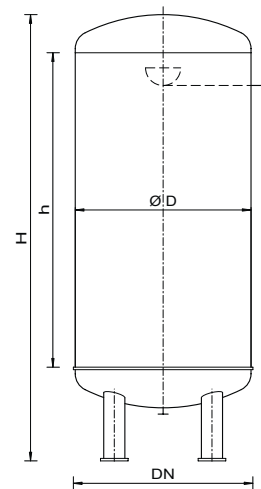
The performance data for filtration, iron removal and demanganisation specified below are based on values obtained through many years of experience and are used for orientation. Strictly, verification of design must be carried out using current raw water values as a basis.

Deacidification filters, activated carbon filters and GIH filters must always be designed to suit a particular application.

### Design and Layout

The filter vessels consist of

- upper and lower torispherical head with cylindrical shell
- flanged-in or welded-in nozzle plate, including screwed-in filter nozzles
- internal flushing funnel
- all required connection nozzles for raw water input, pure water output, backwash water input and output, flushing air and venting
- deflectors at the flushing air connection nozzles
- vessel support feet, manholes/hand holes and name plate

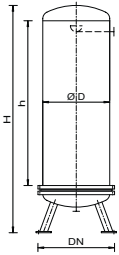


### Performance data

Type	Diameter Ø D [mm]	Filter area [m <sup>2</sup> ]	Filtration output [m <sup>3</sup> /h]	Iron removal output [m <sup>3</sup> /h]	Demanganisation output [m <sup>3</sup> /h]
KIF 35	356	0.093	1,5	1,0	0,75
KIF 45	457	0.156	2,5	1,5	1,0
KIF 50	508	0.193	3,0	2,0	1,5
KIF 60	600	0.272	4,0	2,5	2
KIF 70	700	0.372	5,5	3,5	3
KIF 80	800	0.488	7	5	4
KIF 90	900	0.619	9	6	5
KIF 100	1000	0.767	12	7	6
KIF 120	1200	1.108	17	11	9
KIF 140	1400	1.513	24	15	12
KIF 160	1600	1.981	30	20	16
KIF 180	1800	2.500	38	25	20
KIF 200	2000	3.092	45	30	25
KIF 220	2200	3.746	55	38	30
KIF 240	2400	4.449	65	45	35
KIF 260	2600	5.228	80	50	40
KIF 280	2800	6.070	90	60	45
KIF 300	3000	6.956	100	70	55
KIF 350	3500	9.490	150	95	75

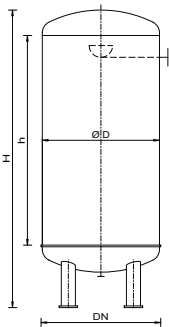
## Dimensions and sizes

Gravel filter  
type 1



Type	KIF 35	KIF 45	KIF 50	KIF 60	KIF 70	KIF 80
Flow rate [m <sup>3</sup> /h]	0.75 - 1.5	1 - 2.5	1.5 - 3	2 - 4	3 - 5.5	4 - 7
Diameter Ø D [mm]	356	457	508	600	700	800
Cylind. mantle height h [mm]	1500	1500	1500	1500	1500	2000
Total height H [mm]	1900	1950	2100	2200	2250	2800
Empty weight [daN]	100	140	180	280	320	450
Operation weight [daN]	350	420	530	800	1180	2200
Connection [DN]	25	32	40	40	50	50/65
Operating pressure g [bar]	4.0	4.0	6.0	6.0	6.0	6.0
Operating temperature [°C]	40.0	40.0	40.0	40.0	40.0	40.0
Support gravel [daN]	25	25	50	50	100	150
Filter gravel [daN]	175	200	300	450	550	1100

Gravel filter  
type 2



Type	KIF 90	KIF 100	KIF 120	KIF 140	KIF 160	KIF 180
Flow rate [m <sup>3</sup> /h]	5 - 9	6 - 12	9 - 17	12 - 24	16 - 30	20 - 38
Diameter Ø D [mm]	900	1000	1200	1400	1600	1800
Cylind. mantle height h [mm]	2000	2000	2000	2000	2000	2000
Total height H [mm]	2900	3100	3200	3300	3400	3500
Empty weight [daN]	640	690	880	1180	1350	1700
Operation weight [daN]	2700	3350	4750	5850	8500	9700
Connection [DN]	50/65	65/80	80/100	80/100	80/100	125/150
Operating pressure g [bar]	6.0	6.0	6.0	6.0	6.0	6.0
Operating temperature [°C]	40.0	40.0	40.0	40.0	40.0	40.0
Support gravel [daN]	150	200	350	450	600	800
Filter gravel [daN]	1450	1700	2350	3250	4250	5300

Type	KIF 200	KIF 220	KIF 240	KIF 260	KIF 280	KIF 300	KIF 350
Flow rate [m <sup>3</sup> /h]	25 - 45	30 - 55	35 - 65	40 - 80	45 - 90	55 - 110	75 - 150
Diameter Ø D [mm]	2000	2200	2400	2600	2800	3000	3500
Cylind. mantle height h [mm]	2500	2500	2500	2500	2500	2500	2500
Total height H [mm]	3950	4050	4100	4150	4200	4300	4500
Empty weight [daN]	2450	2700	3400	3900	5100	6100	7400
Operation weight [daN]	16500	19700	2400	28200	35500	39000	54200
Connection [DN]	125/150	150/200	150/200	150/200	200/250	200/250	200/250
Operating pressure g [bar]	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Operating temperature [°C]	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Support gravel [daN]	1350	1800	190	1950	2850	3150	4350
Filter gravel [daN]	8200	9600	11700	11700	15600	18000	25000

**Design** The filter vessels were designed for the following conditions:

- Max. operating pressure 4 bar (g) with KIF 35 and KIF 45  
6 bar (g) with KIF 50 and up
- Max. operating temperature 40 °C

A customer-specific design with deviating values for pressure and temperature is possible upon request.

## Connection nozzle and fitting dimensions

**Venting/  
Aeration** Full venting/aeration of the vessels during the operating and flushing phases occurs via automatic aeration and ventilation valves.

**Nozzle plate** Vessels with diameters up to 800 mm are equipped with a flanged-in nozzle plate, and vessels from 900 mm and up are equipped with a welded-in nozzle plate.

**Manholes** Vessels with diameters up to 800 mm are equipped with round DN 150 to DN 300 hand holes.  
Vessels with greater diameters are also equipped with DN 450 to DN 600 manholes (factory standard, optional swivel arm for manhole cover).

**Vessel support feet** Three or four support feet are present, depending on the vessel size.  
Comply with DIN 28081 or equivalent.

**Materials** Steel:  
Boiler plate pursuant to EN 10028 T2, with APZ 3.1b if necessary  
Sheet steel pursuant to EN 10025, with APZ 3.1b if necessary  
Stainless steel:  
Austenitic, non-corroding steels  
304 / 321 und 316 Ti, with APZ 3.1b if necessary

**Corrosion protection** Steel version:  

- Internally and externally steel-corundum blasted SA 2.5
- Internal threehold epoxy resin coating, using different colours
- External primer and top coat

 Stainless-steel version:  

- Internally and externally glass-bead blasted and passivated

**Approvals**

- Leak test with factory certification
- Manufactured pursuant to AD specifications and pressure equipment directive 97/23/EC.

Additional tests, e.g. x-raying welding seams or approval by technical supervisory association are possible on request.

Special versions or versions deviating from the norm are possible on request.



- Filtration
- Iron removal
- Demanganisation

### RWT filter systems

